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ENTOMOLOGY.¹

Two New Species of Lecanium from Brazil.—*Lecanium reticulatum*, n. sp., ♀ scale long. 11, lat. 5, alt. 3 mm. Smooth, ridgeless, shiny, dark brown, rather inconspicuously spotted with whitish. These whitish spots are not dermal, but consist of small patches of waxy secretion, which can easily be scraped off. Posterior incision 3 mm. long.

Derm very strongly reticulate, reticulations large, 3, 4, 5 or 6-sided, each with a large oval gland-spot, placed more or less to one side. Walls of reticulations very thick. This reticulation of the derm is easily seen with a lens.

Legs brown, ordinary. Coxa with two hairs at one end, one very long; tibia a little less than one-third shorter than femur; tarsus about one-quarter shorter than tibia.

Tarsal digitules very long, slender, with only moderate knobs, which dilate rather gradually.

Claw short, stout, curved. Digitules of claw small, but extending considerably beyond tip of claw, one larger than the other, stout, with only moderate knobs.

Removed from the bark the insect leaves a patch of white secretion.

A parasitised specimen is only 8 mm. long, and is yellowish-brown, with the reticulation black, very conspicuous with a lens; margin blackish. The parasite must have been a large one, the single hole being over 1 mm. diameter.

Hab., on twigs of an unidentified woody plant, Sao Paulo, Brazil (Dr. H. Von Ihering).

Three were sent, one spoiled by a parasite, the other two in good condition. One of the latter I boiled in caustic alkali, but was not able to obtain all the desirable details from it. The imperfection of the description does not particularly matter, since the species is very easily recognized. It is closely allied to *L. depressum*, Targ., but differs in its very much greater size.

Lecanium baccharidis, n. sp., ♀ scale long. $4\frac{1}{2}$, lat. $2\frac{1}{2}$, alt. $1\frac{1}{4}$ mm. Dark brown, becoming eventually whitish-brown from a waxy or cottony material scattered over the surface. Where one scale overlapped another, the portion covered is bright orange-yellow with a greenish

¹ Edited by Clarence M. Weed, New Hampshire College, Durham, N. H.

tinge. Surface wrinkled, but this no doubt largely due to contraction in drying. Dorsum slightly ridged. Posterior cleft fairly short.

Derm with large gland-pits; not at all reticulate. The pits are strikingly large and numerous.

Legs pale brown, ordinary. Trochanter with a long hair; tibia about one-third longer than tarsus. Claw stout, not very long, curved.

Tarsal digitules filiform, not unusually long. Digitules of claw very stout, with large knobs.

Margin with long straight spines.

Rostral loop short, not reaching to insertion of middle legs.

Anal plates broad, when flattened not far from equilateral, but as ordinarily observed in situ with the posterior external side considerably longer than the anterior external side, the two meeting at about a right-angle.

Anal ring with very numerous hairs, which cannot be counted separately.

Antennæ pale brown, 8-jointed, the joints all very distinct. 3 longest. Formula 3 (24) (18) 567. 7 only a little shorter than 6. 4 about $\frac{1}{2}$ shorter than 3. 8 only a little shorter than 4, tapering.

The larger specimens seem quite adult, though they contain neither eggs nor larvæ.

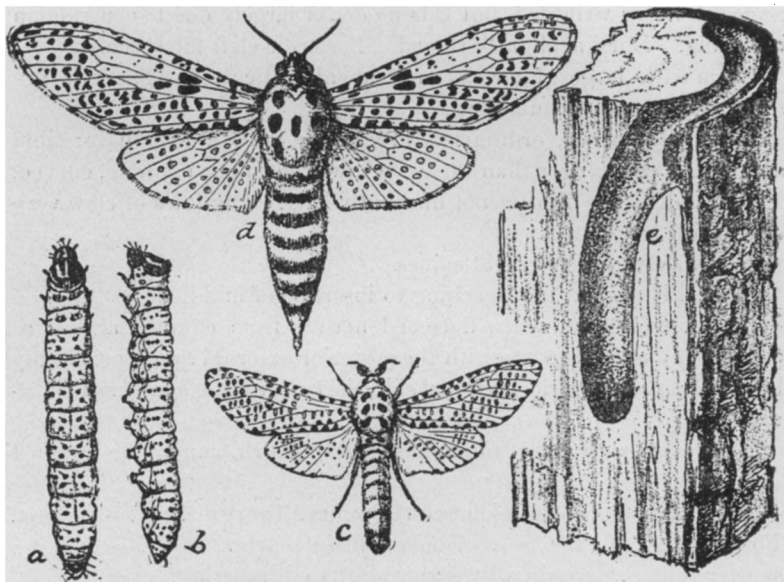
Hab.: Sao Paulo, Brazil, on bark of twigs of *Baccharis* sp., two or more scales sometimes overlapping. (Dr. H. Von Ihering.)

This has the general form and size of *L. hesperidum* (L.), but is a rougher, more opaque form. I do not think it is nearly related to *hesperidum*, such resemblance as exists being merely superficial.

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The Wood Leopard Moth.—There have been frequent reference during the last two years to the ravages of *Zeuzera pyrina* L., a lepidopterous borer of shade-trees, which has been introduced from Europe, and is doing great damage in the parks of New York, Brooklyn and adjacent cities. The various stages of the insect are shown in the accompanying figures from *Insect Life*. Its life-history has recently been summarized by Prof. J. B. Smith, as follows:

“The moths make their appearance in May or June, continuing through July and into August, and are readily attracted to light. It has become the most common species seen around the electric lights in the cities named, and each moth represents a larva that has fed for at least two years in the wood of a neighboring tree, while every female represents the possibility of hundreds of other larvæ to follow the same life history.



The Wood Leopard Moth.—*a, b*, larvæ; *c*, male moth; *d*, female moth; *e*, larval burrow. All natural size.

"The eggs are laid by the female moth on the branches, probably placed just into the bark, and the young larvæ bore at once into the wood, usually at the crotch of a small branch, or at a node, and work downward, sometimes just under the bark, sometimes in the solid wood. They grow apace and get into larger branches, still working downward as a whole, but often varying in course; sometimes making it circular, so as to girdle the stick they feed in. For at least two years they feed, rarely emerging from the burrow, though they do occasionally come out for the purpose of changing their quarters and beginning their destructive work elsewhere. Then they change to somewhat slender, brown pupæ, and these wriggle themselves through the bark in due season, and soon after the moths emerge."

The moths, fortunately, are attracted to electric lights, and large numbers of them are thus destroyed. The larvæ may be destroyed by pouring a little bisulphide of carbon in the burrows and then plugging the outer openings of the latter with putty.

Relaxing Insects.—J. P. Mutch writes in *The Entomologists Record* that "rectified wood naphtha, obtainable from any chemist, containing a trace of white shellac, say ten grains to the ounce, applied

to the under side of the extreme base of the wings by means of a very fine sable brush, within a few seconds renders the wings quite pliable; the insect is then placed on the setting-board and set to the required position, braces being used if necessary. In from twelve to twenty-four hours the specimen is ready for the cabinet, showing no trace of the manipulation it has undergone. The shellac is recommended to prevent any possible future springing or drooping, but the pure naphtha produces an equally satisfactory effect so far as relaxing goes. The old, tedious process of damping may thus be obviated, and the most delicate colors left uninjured."

Eyes of Phalangiidae.²—Herr F. Purcell finds two types differing in the structure of the rhabdome—the *Liobunum* type and the *Acantholophus* type, and describes these in detail. We can only cite a few outstanding results.

One of the most important characteristics of the retina is the constant arrangement of its elements in groups (*retinulae*), each of four cells, and the union of the optic rods of these four cells into a rhabdome, which, though single, is composed of four rhabdomeres. There are no pigment or other cells between the *retinulae*.

In all the species examined the rhabdome consists of two chemically different parts. The one part includes the whole central rhabdomere, and in the *Acantholophus* group the distal portion of the peripheral rhabdomeres. The other part includes in the *Liobunum* group the whole of the peripheral rhabdomeres; in the *Acantholophus* group only the proximal part of the same.

The eyes of the Phalangiidae are three-layered inverse eyes of ectodermic origin. The anterior median eyes of spiders, the eyes of Phalangiidae, the median eyes of scorpions, and at any rate the median eyes of the king-crab, form a series of homologous structures, characterized by an inverted retina with *retinulae* or at least rhabdomeres. As a chief result of his investigation the author claims to have definitely proved that a retina composed of *retinulae*, or of a modification of these, occurs in the higher Arachnid orders—Phalangiidae and spiders. (Journal Royal Microscopical Society.)

Spread of *Otiorhynchus ovatus*.—Mr. H. F. Wickham publishes in *Societas Entomologica* (Dec., 1894) a short paper on the distribution of *O. ovatus* of such interest that we reprint it entire:

"This Euro-Asiatic species has been for some time known as an inhabitant of the United States, but has hitherto been supposed to be

² Zeitschr. f. Wiss. Zool., LVIII., pp. 1-53.

restricted to that portion east of the Mississippi River and north of the thirty-ninth or fortieth parallel. I have lately become possessed of additional data regarding its range, which I herewith record, adding also a number of already published but scattered notes—the whole giving a tolerably complete idea of the American distribution of the insect.

“When known, the year of first capture is also given, though often we can only tell from the date of a given reference that the species was known in that locality *previous* to that time; hence no exact generalizations as to the path or rate of westward progression can be based thereon. A considerable portion of the matter, however, has been gathered directly by correspondence with entomologists in various parts of the country, who have kindly responded to my requests for information, and whose names will be found appended thereto.

“In a recent number of *Insect Life* it is stated by Messrs. Riley and Howard that it was first recorded from the United States in 1873. Not being able to find the reference, I wrote to Mr. Samuel Henshaw, asking help of his unsurpassed knowledge of the bibliography of American beetles. He kindly replied as follows:

“‘The Leconte collection contains a specimen of *ovatus*, No. 1952 of his manuscript catalogue. Against this number Dr. Leconte wrote “pear tree, Harris, Mass.” As Harris collected all his beetles between 1820 and 1852, *ovatus* must have been here (Massachusetts) as early as 1852. The late Mr. J. P. Atkinson collected the species at Cambridge Sept. 2d, 1865, and there is a specimen in the Leconte collection taken by Mr. Schwarz in Cambridge, March 20th, 1874. My earliest specimen is labeled Wyoming, Mass., May 30th, 1874.’

“It was thus evidently established in Massachusetts by this time; a year later it was at Allegheny, in Pennsylvania, as Dr. Hamilton writes me from that place. ‘I took this beetle in a cemetery here in 1875, and it was then apparently abundant. A couple of years afterward it was excessively so, in the same cemetery, but is now (1894) much less common than formerly.’ By 1878 it had reached Detroit, Michigan, when it is recorded in the Hubbard and Schwarz List. Mr. Henshaw had it from Hanover, New Hampshire, as early as 1880. In 1884 it came under Dr. Lintner’s notice in New York, but Mr. Reinecke found it at Buffalo at least two years earlier. About 1882 or 1883 it figured as a strawberry pest in Southern Michigan, and the year 1884 brings a record from Ottawa, Canada, by Mr. Harrington. Not later than 1886 I took it at Iowa City, the record standing for years as the most westerly range known for the species.

In the East, however, it was still being taken at new points, as the following notes show, the dates being those of publication: Nova Scotia, 1889; Chicago, Illinois, 1889; Wayne County, Ohio, 1892; Quebec, 1892; Indiana, 1892; New Jersey. The western range has been greatly extended by the capture of this insect at Laramie, Wyoming, in 1893, by Mr. Niswander, and at Santa Fé, New Mexico, by Mr. Cockerell, in July, 1894. the specimens in both cases being sent me for identification.

"It will thus be seen that the recorded distribution is very much extended of late, and the species by no means restricted in range. Though the dates are insufficient for the tracing of the exact path of the insect, it at least appears to have slowly spread westward and southwestward from the New England States, where it may have been introduced from Europe. From the scattered records and the absence of *O. ovatus* from many points within its range, worked by diligent collectors, I judge that it is not very aggressive in invading new territory, but doubtless tolerably easily introduced in shrubbery or other nursery stock.

"A word as to food-habits here, and I am done: Dr. Hamilton takes it on various bushes. It has been recorded from muskmelon (Webster), strawberry (Weed), borage (Cook), currant (Mrs. Wickham). Mr. Webster also found it breeding in roots of blue-grass. At Iowa City it has been found under boards, and often in bunches of pine shingles. The habit of thus creeping into crannies would greatly aid in extending the distribution by artificial means and explain its appearance in new localities where it could not have been introduced with plants."